

Appl. No. 10/682,084

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Currently amended): A method of detecting nodes for wireless communications between nodes forming a wireless network, comprising the steps of:

recurrently sending from a node forming a part of the wireless network a message for detection by any new node; and

in a new node, monitoring for detection of said message and and/or for wireless network traffic, responding to ~~such detection of said message by sending a reply, responding to wireless network traffic by waiting for a pause in the wireless network traffic and sending a message during the pause to indicate the presence of the new node, and in the absence of such detection~~ otherwise recurrently sending a message for detection by any other node.

Claim 2 (Original): A method as claimed in claim 1 wherein the nodes comprise multiple beam directional antennas, and the step of recurrently sending from a node forming a part of the wireless network a message for detection by any new node comprises recurrently sending said message on antenna beams not carrying wireless network traffic.

Claim 3 (Currently amended): A method as claimed in claim 1 wherein the nodes comprise multiple beam directional antennas, and the step of recurrently sending a message for detection by any other node from a new node ~~in the absence of said detection~~ comprises recurrently sending said message on each of a plurality of antenna beams.

Claim 4 (Currently amended): A method as claimed in claim 1 wherein the nodes comprise multiple beam directional antennas, and the step of, in a new node, monitoring for detection of said message and and/or for wireless network traffic comprises successively monitoring using each of a plurality of antenna beams.

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Claim 5 (Original): A method as claimed in claim 4 wherein the step of successively monitoring using each of a plurality of antenna beams uses a subset of overlapping antenna beams of the node.

Claim 6 (Original): A method as claimed in claim 4 wherein the nodes comprise main and diversity receive paths, and the step of successively monitoring using each of a plurality of antenna beams comprises monitoring using the main and diversity receive paths simultaneously for antenna beams having different directions.

Claim 7 (Original): A method as claimed in claim 5 wherein the nodes comprise main and diversity receive paths, and the step of successively monitoring using each of a plurality of antenna beams comprises monitoring using the main and diversity receive paths simultaneously for antenna beams having different directions.

Claim 8 (Currently amended): A method as claimed in claim 1 wherein the wireless communications comprise a plurality of frequency channels, and the step of, in a new node, monitoring for detection of said message ~~and~~ ~~and/or~~ for wireless network traffic comprises successively monitoring for each of a plurality of the frequency channels.

Claim 9 (Currently amended): A method as claimed in claim 1 wherein the wireless communications comprise a plurality of frequency channels, and the step of recurrently sending a message for detection by any other node from a new node ~~in the absence of said detection~~ comprises recurrently sending said message using each of a plurality of the frequency channels.

Claim 10 (Currently amended): A method as claimed in claim 9 wherein the nodes comprise multiple beam directional antennas, and the step of recurrently sending a message for detection by any other node from a new node ~~in the absence of said detection~~ further comprises recurrently sending said message on each of a plurality of antenna beams.

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Claim 11 (Currently amended): A method as claimed in claim 10 wherein the step of, in a new node, monitoring for detection of said message and ~~and/or~~ for wireless network traffic comprises successively monitoring using each of a plurality of antenna beams.

Claim 12 (Original): A method as claimed in claim 11 wherein the step of successively monitoring using each of a plurality of antenna beams uses a subset of overlapping antenna beams of the node.

Claim 13 (Original): A method as claimed in claim 11 wherein the nodes comprise main and diversity receive paths, and the step of successively monitoring using each of a plurality of antenna beams comprises monitoring using the main and diversity receive paths simultaneously for antenna beams having different directions.

Claim 14 (Original): A method as claimed in claim 1 wherein the wireless communications comprise a plurality of frequency channels, the method further comprising the step of, in each node which communicates with another node of the wireless network using a given frequency, compiling a list of preferred frequencies for potential use for such communications in the event of failure of such communications using the given frequency.

Claim 15 (Original): A method as claimed in claim 14 and further comprising the steps of, in a node which communicates with another node using a given frequency, detecting failure of such communications using the given frequency, sending an indication of a preferred frequency from its list via other communications paths of the network, and sending to said another node a message to use the preferred frequency for restoring the failed communications.

Claim 16 (Original): A node for a wireless access network, the node comprising an access radio system for bidirectional wireless communications with wireless terminals, a transit radio system for bidirectional wireless communications with at least one other node of the network, and a communications control unit for coupling signals to be communicated between the access radio

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system and the transit radio system, the control unit being arranged for operation of the node in accordance with the method of claim 1.

Claim 17 (Original): A node as claimed in claim 16 wherein the transit radio system comprises a multiple beam directional antenna.

Claim 18 (Original): A node as claimed in claim 17 wherein the transit radio system and its antenna comprise main and diversity receive paths.

Claim 19 (Original): A wireless access network comprising a plurality of nodes each as claimed in claim 17.

Claim 20 (Original): A wireless access network as claimed in claim 19 and including a connection of one of the nodes to a communications network.

Claim 21 (New): A method of detecting nodes for wireless communications between nodes forming a wireless network, comprising the steps of:

recurrently sending from a node forming a part of the wireless network a message for detection by any new node; and

in a new node, monitoring for detection of said message and/or for wireless network traffic, responding to such detection, and in the absence of such detection recurrently sending a message for detection by any other node;

wherein the wireless communications comprise a plurality of frequency channels, the method further comprising the step of, in each node which communicates with another node of the wireless network using a given frequency, compiling a list of preferred frequencies for potential use for such communications in the event of failure of such communications using the given frequency.

Claim 22 (New): A method as claimed in claim 21 and further comprising the steps of, in a node which communicates with another node using a given frequency, detecting failure of such

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communications using the given frequency, sending an indication of a preferred frequency from its list via other communications paths of the network, and sending to said another node a message to use the preferred frequency for restoring the failed communications.